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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,095	11/22/2000	Toyotaro Tokimoto	TOKIMOTO ET AL PCT	6201

7590 09/10/2004

COLLARD & ROE, P.C.
1077 NORTHERN BOULAVARD
ROSLYN, NY 11576

EXAMINER	
BRIER, JEFFERY A	

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/701,095	TOKIMOTO ET AL.	
	Examiner	Art Unit	
	Jeffery A Brier	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/12/04*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-9 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-9 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/21/04, 5/27/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicants amendment filed on July 13, 2004 and refaxed on August 12, 2004 has been entered. The refaxing of the amendment was due to artifacts in the received July 12, 2004 amendment caused by the fax system.

Response to Arguments

2. Applicants arguments filed on August 12, 2004, a refax of the July 12, 2004 argumenst, have been considered but are deemed to be not persuasive. On page 12 first full paragraph to page 15 second full sentence applicant agrees with the Examiner's previous statement concerning the differences between applicants system and Phan's system. However, it should be noted the currently pending claims do not fully set forth the differences. Specifically apparatus claim 9 claims "repetitive-selecting step of repetitively selecting...a piece of the first color data, a piece of the second color data, and a piece of the third color data, respectively pixel-by-pixel at high speed according a predetermined order wherein said activating circuit section is caused to perform an activating step of: activating the first color lamp, the second color lamp, and the third color lamp, respectively, that is related to said one first color group, said one second color group, and said one third color group, according to said piece of the first color data, said piece of the second color data, and said piece of the third color data...". Newly submitted method claim 12 claims claims "an activating step of: repetitively selecting...a piece of the first color data, a piece of the second color data, and a piece

of the third color data, respectively pixel-by-pixel at high speed according a predetermined order; and activating the first color lamp, the second color lamp, and the third color lamp, respectively, that is related to said one first color group, said one second color group, and said one third color group, respectively, according to said piece of the first color data, said piece of the second color data, and said piece of the third color data...". The claims do not claim when the repetitively selecting occurs. All display systems including Phan repetitively select over time a piece of the first color data, a piece of the second color data, and a piece of the third color data, respectively, pixel-by-pixel at high speed according a predetermined order because over time each data is selected pixel by pixel many times over several frames and the term high speed is a relative term having no definite meaning in the current claims and since the term predetermined order is very broad term covering all order of selecting pixels. Phan during each refresh cycle of the screen, column 3 lines 31, selects Red, Green and Blue pixel data, and with reference to figure 4A, for example, it is clearly seen that each RGB pixel data except for the first three and the last three RGB data are selected at least three times during the refresh cycle of the screen which occurs at 100 HZ, column 3 lines 58-59. The example given by applicant at pages 15-17 is noted but the claims are not limited to the specifics of the given example. The statement in the first full paragraph on page 17 is noted but the claims are not limited to a display screen which has a smaller number of pixels than the number of pixels of the full color image data to display a clear fine high quality full color image without thinning out the data. Therefore, the rejection based upon Phan is maintained.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 2, 5-9, and 12 are rejected under 35 U.S.C. 102(a) as being anticipated by Gia Chuong Phan, U.S. Patent No. 6,661,429.

A detailed analysis of the claims follows.

Claim 12:

Phan teaches a method for displaying bitmap multi-color image data (*figures 2a and 2b show a bit map image formed with red, green and blue dots*) on a dot-matrix type display screen (*see figures 2a and 2b*),

wherein said dot-matrix type display screen includes a multitude of first color lamps (*red dots 13, LED*), a multitude of second color lamps (*green dots 14, LED*) , and a multitude of third color lamps (blue *dots 15, LED*), wherein said multitude of first color lamps, said multitude of second color lamps, and said multitude of third color lamps are dispersedly arranged on said display screen evenly and according to a regular pattern (*the LEDs are arranged in a matrix, thus, they are dispersedly arranged in a regular pattern*), wherein each pixel on a multi-color data plane (*RGB data plane, see figure 4a*), which is constructed based on said bitmap multi-color image data (*RGB data, see figure 4a*), is an aggregate made of a piece of first color data for

said pixel on a first color data plane (*A piece of the red data plane is used for the Red pixel of figure 4a.*), a piece of second color data for said pixel on a second color data plane (*A piece of the green data plane is used for the Red pixel of figure 4a.*), and a piece of third color data for said pixel on a third color data plane (*A piece of the blue data plane is used for the Red pixel of figure 4a.*),

said method comprising:

a grouping step of

grouping the multitude of pixels on said first color data plane (*Red data*), said second color data plane (*Green data*), and said third color data plane (*Blue data*), respectively, into a multitude of first color groups (*Red color data forming both the static pixel and two or three dynamic pixels.*), a multitude of second color groups (*Green color data forming both the static pixel and two or three dynamic pixels.*), and a multitude of third color groups (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively (*The static pixel data and the data for each of the two or three dynamic pixels that affect any one dot is formed by grouping the data of the static pixels into groups*),

wherein each of said first color groups, each of said second color groups, and each of said third color groups, respectively, is made of a plurality of adjacent pixels on said first color data plane, said second color data plane, and said third color data plane, respectively (*The Red, Green and Blue color data for static pixel and the two or three dynamic pixels are from a plurality of adjacent pixels in the color data planes of the*

color digital information received by control circuit 19, column 3 lines 46-50.),

wherein the positional relationship among said first color groups, said second color groups, and said third color groups projected on said multi-color data plane corresponds to the positional shift among said first color lamps, said second color lamps, and said third color lamps on said dot matrix-type display screen (*The arrangement of the static pixels and the dynamic pixels correspond to the positional shift of the Red, Green and Blue LEDs.*), and

wherein the positions of the first color group (*Red color data forming both the static pixel and two or three dynamic pixels.*), the second color group (*Green color data forming both the static pixel and two or three dynamic pixels.*), and the third color group (*Green color data forming both the static pixel and two or three dynamic pixels.*) that are adjacent to each other on said multi-color data plane partially overlap one another (*The positions of each of the color groups partially overlap, see figures 2, 4 and 5.*;

a relating step of relating, by one-to-one correspondence, each of said first color groups (*Red color data forming both the static pixel and two or three dynamic pixels.*), each of said second color groups (*Green color data forming both the static pixel and two or three dynamic pixels.*), and each of said third color groups (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively, on said first color data plane, said second color data plane, and said third color data plane, respectively, to a different one of said first color lamps, one of said second color

lamps, and one of said third color lamps, respectively, on said dot matrix-type display screen (*The static pixels and the two or three dynamic pixels are shifted to the right to different sets of Red, Green and Blue color LEDs. Additionally subsequent red, green and blue color groups are related to subsequent color LEDs.*); and

an activating step of:

repetitively selecting, from among the plurality of pieces of the first color data, the second color data, and the third color data, respectively, for the plurality of pixels that belong to one first color group (*Red color data forming both the static pixel and two or three dynamic pixels.*), one second color group (*Green color data forming both the static pixel and two or three dynamic pixels.*), and one third color group (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively, a piece of the first color data (*Red*), a piece of the second color data (*Green*), and a piece of the third color data (*Blue*), respectively, pixel-by-pixel at high speed (*100 Hz is high speed compared to normal raster scanning*) according to a predetermined order (*The order of Phan's scanning is the order of the received information or the order of scanning known displays, column 3 lines 46-50, which normally is from top to bottom and from left to right.*); and

activating the first color lamp, the second color lamp, and the third color lamp, respectively, that is related to said one first color group, said one second color group, and said one third color group, respectively, according to said piece of the first color data, said piece of the second color

data, and said piece of the third color data, respectively, that has been selected (*The LEDs are activated to emit red, green and blue light corresponding to the red color data, green color data and blue color data of each pixel of the static pixel and two or three dynamic pixels.*),

wherein said activating step is carried out for all of the first, second, and third color groups (*The red, green and blue color group's corresponding LEDs are activated for all of red, green and blue color groups.*).

Claim 2

Phan teaches the method according to claim 12, wherein a total of four pixels, adjacent each other in two rows and two columns on said bitmap image data plane, constitute *one* of the groups (*figure 2b shows four pixels forming one group having tow rows and two columns*).

Claim 5:

Phan teaches the method according to claim 12, wherein said groups having the same color are partially overlapped on said bitmap image data plane (*each of the green, red and blue LEDs of static pixel 17 are overlapped by the corresponding green, red and blue LED data of the static pixel data and the two or three dynamic pixel data*). This claim is a comprising claim which is open ended allowing the reference to teach more than the claim claims as long as the claim does not specifically exclude the additional teaching.

Claim 6:

Phan teaches the method according to claim 12, wherein said groups having the same color do not overlap one another on said bitmap image data plane (*Figures 2, 4 and 5 show at the corners groups having the same color that do not overlap with same color data of the bitmap image data plane.*).This claim is a comprising claim which is open ended allowing the reference to teach more than the claim claims as long as the claim does not specifically exclude the additional teaching.

Claim 7:

Phan teaches the method according to claim 12, wherein regularity for orderly selecting the first color data (*Red pixel data.*), the second color data (*Green pixel data.*), and the third color data (*Blue pixel data.*) for the pixels that belong to one first color group (*Red color data forming both the static pixel and two or three dynamic pixels.*), one second color group (*Green color data forming both the static pixel and two or three dynamic pixels.*)) and one third color group (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively, is the same among all groups (*The sequence for selecting the red, green and blue color data of the received static bitmap for each of the three color groups is the same as can be seen from figures 2, 4 and 5 for one frame of the bitmap data.*).

Claim 8:

Phan teaches the method according to claim 11, wherein regularity for orderly selecting the first color data (*Red pixel data.*), the second color data (*Green pixel data.*), and the third color data (*Blue pixel data.*) for the pixels that belong to one first color group (*Red color data forming both the static pixel and two or three dynamic pixels.*), one second color group (*Green color data forming both the static pixel and two or three dynamic pixels.*)) and one third color group (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively, is different among adjacent groups (*Figures 2, 4 and 5 show at the edge lines and the beginning and ending of the lines different bitmap data forming those pixels.*). This claim is a comprising claim which is open ended allowing the reference to teach more than the claim claims as long as the claim does not specifically exclude the additional teaching.

Claim 9:

Phan teaches a display apparatus comprising:

a dot matrix-type display screen section in which said first color lamps, said second color lamps and said third color lamps are dispersedly arrayed (*Figures 2, 4 and 5 clearly show a dot matrix-type display. Column 1 lines 5-10 describes a dot matrix-type display.*);

an activating circuit section for individually activating said first lamps (*red dots 13, LED*), said second lamps (*green dots 14, LED*) and said third lamps (blue *dots*

15, LED) to emit light (*at column 3 lines 50-53 each dot has its own receiver for receiving digital information and converting the digital information into luminescent intensity of the dots*);

an image data storing section for storing bitmap multi-color image data to be displayed (*inherently an image data storing section is present in order for controller 19 to combine neighboring dots 11 to a dynamic pixel 18.*); and

a data distribution control section for distributing and transferring the image data stored in the image data storing section to said activating circuit section (*controller 19 after combining neighboring dots 11 to a dynamic pixel 18 then distributes and transfer the image data via network 20 to the dot's receiver*);

wherein each pixel on a multi-color data plane (*RGB data plane, see figure 4a*), which is constructed based on said bitmap multi-color image data (*RGB data, see figure 4a*), is an aggregate made of a piece of first color data for said pixel on a first color data plane (*A piece of the red data plane is used for the Red pixel of figure 4a.*), a piece of second color data for said pixel on a second color data plane (*A piece of the green data plane is used for the Red pixel of figure 4a.*), and a piece of third color data for said pixel on a third color data plane (*A piece of the blue data plane is used for the Red pixel of figure 4a.*),

wherein said data distribution control section (*controller 19*) is caused to perform:

a grouping step of grouping the multitude of pixels on said first color data plane (*Red data*), said second color data plane (*Green data*), and said third color data plane (*Blue data*), respectively, into a multitude of first color groups (*Red color data forming both the static pixel and two or three dynamic pixels.*), a multitude of second color groups (*Green color data forming both the static pixel and two or three dynamic pixels.*), and a multitude of third color groups (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively (*The static pixel data and the data for each of the two or three dynamic pixels that affect any one dot is formed by grouping the data of the static pixels into groups*),

wherein each of said first color groups, each of said second color groups, and each of said third color groups, respectively, is made of a plurality of adjacent pixels on said first color data plane, said second color data plane, and said third color data plane, respectively (*The Red, Green and Blue color data for static pixel and the two or three dynamic pixels are from a plurality of adjacent pixels in the color data planes of the color digital information received by control circuit 19, column 3 lines 46-50.*),

wherein the positional relationship among said first color groups, said second color groups, and said third color groups projected on said multi-color data plane corresponds to the positional shift among said first color lamps, said second color lamps, and said

third color lamps on said dot matrix-type display screen (*The arrangement of the static pixels and the dynamic pixels correspond to the positional shift of the Red, Green and Blue LEDs.*), and

wherein the positions of the first color group (*Red color data forming both the static pixel and two or three dynamic pixels.*), the second color group (*Green color data forming both the static pixel and two or three dynamic pixels.*), and the third color group (*Green color data forming both the static pixel and two or three dynamic pixels.*) that are adjacent to each other on said multi-color data plane partially overlap one another (*The positions of each of the color groups partially overlap, see figures 2, 4 and 5.*);

a relating step of relating, by one-to-one correspondence, each of said first color groups (*Red color data forming both the static pixel and two or three dynamic pixels.*), each of said second color groups (*Green color data forming both the static pixel and two or three dynamic pixels.*), and each of said third color groups (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively, on said first color data plane, said second color data plane, and said third color data plane, respectively, to a different one of said first color lamps, one of said second color lamps, and one of said third color lamps, respectively, on said dot matrix-type display screen (*The static pixels and the two or three dynamic pixels are shifted to the right to different sets of Red, Green and Blue color LEDs. Additionally subsequent red, green and blue color groups are related to subsequent color LEDs.*); and

a repetitive-selecting step of repetitively selecting, from among the plurality of pieces of the first color data, the second color data, and the third color data, respectively, for the plurality of pixels that belong to one first color group (*Red color data forming both the static pixel and two or three dynamic pixels.*), one second color group (*Green color data forming both the static pixel and two or three dynamic pixels.*), and one third color group (*Blue color data forming both the static pixel and two or three dynamic pixels.*), respectively, a piece of the first color data (*Red*), a piece of the second color data (*Green*), and a piece of the third color data (*Blue*), respectively, pixel-by-pixel at high speed (*100 Hz is high speed compared to normal raster scanning*) according to a predetermined order (*The order of Phan's scanning is the order of the received information or the order of scanning known displays, column 3 lines 46-50, which normally is from top to bottom and from left to right.*); and

activating the first color lamp, the second color lamp, and the third color lamp, respectively, that is related to said one first color group, said one second color group, and said one third color group, respectively, according to said piece of the first color data, said piece of the second color data, and said piece of the third color data, respectively, that has been selected (*The LEDs are activated to emit red, green and blue light corresponding to the red color data, green color data and blue color data of each pixel of the static pixel and two or three dynamic pixels.*),

wherein said repetitive-selecting step and activating step are carried out for all of the first, second, and third color groups (*The red, green and blue pixel data for each of the*

red, green and blue color groups are repetitively selected in a raster sequence and corresponding LEDs activated for all of red, green and blue color groups.).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gia Chuong Phan, U.S. Patent No. 6,661,429.

Claim 3:

The method according to claim 12, wherein a total of nine pixels, adjacent each other in three rows and three columns on said bitmap image data plane, constitute one of the groups.

Phan does not teach nine pixels constituting one of the groups. Phan in figures 2a and 2b clearly teaches using one, two, or four static pixels 17 constituting one of the groups. Phan in figure 4 clearly teaches one or two static pixels 17 constituting one of the groups. More pixels would be desirable if more color resolution is desired. It would have been obvious to one of ordinary skill in the art at the time of the invention to have nine pixels form the group so increased color resolution is generated which is an object of Phan's invention.

Claim 4:

The method according to claim 12, wherein a total of sixteen pixels, adjacent each other in four rows and four columns on said bitmap image data plane, constitute one of the groups.

Phan does not teach sixteen pixels constituting one of the groups. Phan in figures 2a and 2b clearly teaches using one, two, or four static pixels 17 constituting one of the groups. Phan in figure 4 clearly teaches one or two static pixels 17 constituting one of the groups. More pixels would be desirable if more color resolution is desired. It would have been obvious to one of ordinary skill in the art at the time of the invention to have sixteen pixels form the group so increased color resolution is generated which is an object of Phan's invention.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A Brier whose telephone number is 703-305-4723. The examiner can normally be reached on M-F from 6:30 to 3:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (703) 305-4713). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffery A Brier
Primary Examiner
Art Unit 2672